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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,569	07/10/2006	Kazuhiro Hayakawa	293209US40PCT	4420

22850 7590 10/15/2009

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EXAMINER	
SHIVERS, ASHLEY L	

ART UNIT	PAPER NUMBER
2477	

NOTIFICATION DATE	DELIVERY MODE
10/15/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/585,569	HAYAKAWA ET AL.	
	Examiner	Art Unit	
	ASHLEY L. SHIVERS	2477	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

--In [0007] – [0031] make reference to claims 1-12 which have been cancelled. Examiner suggests either removing those citations or updating with the current claim listing.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 25 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen et al. (**U.S. PGPub 2004/0252674**), hereinafter referred to as Soininen in view of Widegren et al. (**U.S. Patent No. 6,374,112**), hereinafter referred to as Widegren.

Regarding claim 25, Soininen teaches of a packet communication network that is connected to a first external network and a second external network, and that executes

packet communication between the first external network and the second external network, the packet communication network comprising:

a parallel network constituted by a plurality of any one of physically and logically independent networks (**Circuit-switched (#6-#7) and packet-switched networks (#8-#11); See Fig. 1**);

at least one classifier (**RAN; See Fig. #1, #4**) that is connected to the first external network (**UE; See Fig. 1, #1**) and to each of the networks in the parallel network, and that classifies a packet received from the first external network to one of the networks in the parallel network (**RAN separates the circuit-switched traffic from the packet-switched traffic; See Fig. 1, #4**); and

at least one multiplexer (**RAN; See Fig. 1, #5**) that is connected to each of the networks in the parallel network and to the second external network (**UE; See Fig. 1, #2**), that multiplies packets received from a plurality of networks in the parallel network, and that outputs a multiplexed packet to the second external network (**RAN brings the packets back together and forwards them to UE#2; See Fig. 1, #5 and #2**).

Soininen fails to explicitly teach of multiplexing the packets together.

Widegren teaches of the RAN determining what to multiplex (**It is the task of the UTRAN to map radio access bearers onto physical transport channels in a flexible, efficient and optimal manner. The mapping includes selecting channel parameters based on quality of service parameters that accompany the radio access**

bearer requests including which radio access bearers will be multiplexed with each other and at which level; See col. 8-20).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network of Soininen to include multiplexing packets together to send to the external network taught by Widegren in order to allow for simultaneous packet-switched and circuit-switched connectivity in a single logical communication arrangement.

Regarding clam 38, Soininen teaches a packet communication method realized on a packet communication network that is connected to a first external network and a second external network, and that executes a packet communication between the first external network and the second external network, wherein the packet communication network includes

a parallel network constituted by a plurality of any one of physically and logically independent networks (**Circuit-switched (#6-#7) and packet-switched networks (#8-#11); See Fig. 1**);

at least one classifier (**RAN; See Fig. #1, #4**) that is connected to the first external network (**UE; See Fig. 1, #1**) and to each of the networks in the parallel network (**See Fig. 1**); and

at least one multiplexer (**RAN; See Fig. 1, #5**) that is connected to each of the networks in the parallel network and to the second external network (**UE; See Fig. 1, #2**), wherein the packet communication method comprises:

the classifier (**RAN; See Fig. #1, #4**) classifying a packet received from the first external network to one of the networks in the parallel network (**RAN separates the circuit-switched traffic from the packet-switched traffic; See Fig. 1, #4**);

each of the networks in the parallel network transferring the packet (**The packet-switched network and circuit-switched network transfer packets; See Fig. 1 and Fig. 3**); and

the multiplexer multiplexing packets received from a plurality of networks in the parallel network and outputting a multiplexed packet to the second external network (**RAN brings the packets back together and forwards them to UE#2; See Fig. 1, #5 and #2**).

Widegren teaches of the RAN determining what to multiplex (**It is the task of the UTRAN to map radio access bearers onto physical transport channels in a flexible, efficient and optimal manner. The mapping includes selecting channel parameters based on quality of service parameters that accompany the radio access bearer requests including which radio access bearers will be multiplexed with each other and at which level; See col. 8-20**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication method of Soininen to include multiplexing packets together to send to the external network taught by Widegren in order to allow for simultaneous packet-switched and circuit-switched connectivity in a single logical communication arrangement.

4. Claims 26-27 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen in view of Widegren in further view of Chaskar (**U.S. Patent No. 7,023,820**), hereinafter referred to as Chaskar.

Regarding claims 26 and 39, Soininen in view of Widegren teaches the packet communication network/method according to claims 25 and 38, respectively, but fails to teach of the classifier classifying a packet according to a feature amount of a form of the packet.

Chaskar teaches of classifying a packet according to various parameters in an IP packet (**Packet size may be used to differentiate between packets; See col. 7, lines 7-9**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren to include classifying a packet according to a feature amount of a form of the packet taught by Chaskar in order to allow for end-to-end flow control.

Regarding claims 27 and 40, Soininen in view of Widegren further fails to teach of the packet communication network/method according to claims 26 and 39, respectively, wherein the feature amount is a packet length of the packet.

Chaskar teaches of classifying a packet according to various parameters in an IP packet (**Packet size may be used to differentiate between packets; See col. 7, lines 7-9**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren to include classifying a packet according to the packet length taught by Chaskar in order to allow for end-to-end flow control.

5. Claims 28-29 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen in view of Widegren in further view of Kekki (**U.S. PGPub 2005/0073953**), hereinafter referred to as Kekki.

Regarding claims 28 and 41, Soininen in view of Widegren teaches the packet communication network/method according to claims 25 and 38, respectively, but fails to teach of the classifier classifying a packet according to a feature amount of contents of the packet.

Kekki teaches of classifying a packet according to the DSCP (**In 3GPP UTRAN it is assumed that the serving RNC is responsible for making decisions regarding the TNL-QoS. The originating UTRAN node has then the responsibility of marking the appropriate DSCP in the headers of those IP datagrams the originating node is transmitting; See [0014]**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren to include classifying a packet according a feature amount of contents of the packet taught by Kekki in order to identify the behavior aggregate.

Regarding claims 29 and 42, Soininen in view of Widegren further fails to teach of the packet communication network/method according to claims 28 and 41, respectively, wherein the feature amount is a DiffServ code point of an IP packet.

Kekki teaches of classifying a packet according to the DSCP (**In 3GPP UTRAN it is assumed that the serving RNC is responsible for making decisions regarding the TNL-QoS. The originating UTRAN node has then the responsibility of marking the appropriate DSCP in the headers of those IP datagrams the originating node is transmitting; See [0014]**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren to include classifying a packet according the DSCP of an IP packet taught by Kekki in order to identify the behavior aggregate.

6. Claims 30 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen in view of Widegren and Kekki in further view of Chaskar.

Regarding claims 30 and 43, Soininen in view of Widegren and Kekki teaches the packet communication network/method according to claims 28 and 41, respectively, but fails to teach of the feature amount being any one of a protocol number of an IP packet, a destination port number of a UDP packet, and a destination port number of a TCP packet.

Chaskar teaches of the feature amount being a protocol ID (**See col. 7, lines 7-9**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren to include the feature amount being a protocol ID taught by Chaskar in order to separate the various protocols being implemented.

7. Claims 31 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen in view of Widegren and Chaskar in further view of Brouwer (**U.S. Patent No. 6,760,303**), hereinafter referred to as Brouwer.

Regarding claims 31 and 44, Soininen in view of Widegren and Chaskar teaches the packet communication network/method according to claims 26 and 39, respectively, but fails to teach of the classifier classifying the packet according to a time series change in a sum of data amounts of packets having an equal feature amount.

Brouwer teaches of setting a timeout value and threshold for the cell loads and switching channels based on the timeout value and threshold (**See Fig. 3a, #7 and #8**),

interpreted as the time series change and the sum of data amounts of packets having an equal feature amount (**same channel, i.e., packet-switched or circuit-switched**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren and Chaskar to include classifying the packet according to a time series change in a sum of data amounts of packets having an equal feature amount taught by Brouwer in order to reduce packet loss or delay.

8. Claims 32 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen in view of Widegren and Kekki in further view of Brouwer.

Regarding claims 32 and 45, Soininen in view of Widegren and Kekki teaches the packet communication network/method according to claims 28 and 41, respectively, but fails to teach of the classifier classifying the packet according to a time series change in a sum of data amounts of packets having an equal feature amount.

Brouwer teaches of setting a timeout value and threshold for the cell loads and switching channels based on the timeout value and threshold (**See Fig. 3a, #7 and #8**), interpreted as the time series change and the sum of data amounts of packets having an equal feature amount (**same channel, i.e., packet-switched or circuit-switched**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren and Kekki to include classifying the packet according to a

time series change in a sum of data amounts of packets having an equal feature amount taught by Brouwer in order to reduce packet loss or delay.

9. Claims 33 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen in view of Widegren in further view of Brouwer.

Regarding claims 33 and 46, Soininen in view of Widegren teaches the packet communication network/method according to claims 25 and 38, respectively, but fails to teach of the classifier including a detector that detects a status of traffic of each of the networks in the parallel network, and classifies a packet according to the status of the traffic.

Brouwer teaches of a detector (**The cell load detector determines whether to switch to/from different types of channels; See Fig. 3b, #190; col. 6, lines 60-67 and col. 7, lines 1-2**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren to include a detector that detects a status of traffic of each of the networks in the parallel network and classifies a packet according to the status of the traffic taught by Brouwer in order to prevent packet loss or delay.

10. Claims 34 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen in view of Widegren in further view of Boudreaux (**U.S. Patent No. 6,466,556**), hereinafter referred to as Boudreaux.

Regarding claims 34 and 47, Soininen in view of Widegren teaches the packet communication network/method according to claims 25 and 38, respectively, but fails to teach of the networks in the parallel network being logically grouped into a plurality of groups so that each of the groups includes a plurality of networks that are physically same.

Boudreaux teaches of the networks in the parallel network being logically grouped into a plurality of groups so that each of the groups includes a plurality of networks that are physically same (**See Fig. 1B in which the circuit-switched domain contains two VMSC, interpreted as the circuit-switched networks, and the packet switched domain contains two SGSN and GGSN nodes, interpreted as the packet-switched networks, therefore the various networks are physically same for their respective domains**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren to include networks in the parallel network being logically grouped into a plurality of groups so that each of the groups includes a plurality of networks that are physically same taught by Boudreaux in order to allow

for more flexibility in determining how to route the packets and allowing for an increase in packet transmission.

11. Claims 35 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen in view of Widegren and Boudreaux in further view of Abrams et al. (**U.S. Patent No. 7,158,508**), hereinafter referred to as Abrams.

Regarding claims 35 and 48, Soininen in view of Widegren and Boudreaux teaches the packet communication network/method according to claims 34 and 47, respectively, but fails to teach of the groups includes a unit that dynamically changes an allocation of bands to each of the networks in the group.

Abrams teaches of a line processor that dynamically changes an allocation of bands to each of the networks in the groups (**Dynamic allocation of circuit-switched an packet-switched resources is provided. As a measure of a plurality of resources required for packet-switched and circuit-switched calls varies with time, the allocation of resources between the network switches and local switches, and between network switches, are dynamically modified; See col. 2, lines 60-66**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communications network/method of Soininen in view of Widegren and Boudreaux to include dynamically changing an allocation of bands to each of the networks in the group taught by Abrams in order to

allow for simultaneous communications using different networks while minimizing packet loss or delays.

12. Claims 36-37 and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soininen in view of Widegren in further view of Davis et al. (**U.S. Patent No. 6,781,971**), hereinafter referred to as Davis.

Regarding claims 36 and 49, Soininen in view of Widegren teaches the packet communication network/method according to claims 25 and 38, respectively, but fails to teach of the multiplexer preferentially processing a packet received from a specific one of the networks in the parallel network.

Davis teaches of prioritizing circuit-switched traffic over packet-switched traffic (**See col. 11, lines 56-64**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren to include the multiplexer preferentially processing a packet from a specific one of the networks in the parallel network taught by Davis in order to free up resources, thereby reducing delay and packet loss.

Regarding claims 37 and 50, Soininen in view of Widegren teaches the packet communication network/method according to claims 25 and 38, respectively, but fails

to teach of the multiplexer preferentially processing a packet having a predetermined feature amount.

Davis teaches of prioritizing voice services over circuit-switched traffic and packet-switched traffic (**See col. 11, lines 56-64**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention, to modify the packet communication network/method of Soininen in view of Widegren to include the multiplexer preferentially processing a packet having a predetermined feature amount taught by Davis in order to free up resources, thereby reducing delay and packet loss.

Conclusion

13. Any response to this action should be **faxed** to (571) 273-8300 or **mailed** to:

Commissioner of Patents,
P.O. Box 1450
Alexandria, VA 22313-1450

Hand delivered responses should be brought to:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASHLEY L. SHIVERS whose telephone number is (571) 270-3523. The examiner can normally be reached on Monday-Friday 8:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag Shah can be reached on (571) 272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. L. S./
Examiner, Art Unit 2477
10/9/2009

/Chirag G Shah/
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